

| | |
|-------------------------|--|
| 1. Record Nr. | UNINA9910826738903321 |
| Autore | Singh Bikram Jit |
| Titolo | Rsm : a key to optimize machining : multi-response optimization of CNC turning with Al-7020 alloy / / Bikram Jit Singh, Harsimran Singh Sodhi |
| Pubbl/distr/stampa | Hamburg, Germany : , : Anchor Academic Publishing, , 2014 2014 |
| ISBN | 3-95489-709-1 |
| Descrizione fisica | 1 online resource (118 p.) |
| Disciplina | 001.434 |
| Soggetti | Experimental design - Graphic methods Response surfaces (Statistics) - Germany |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| Note generali | Description based upon print version of record. |
| Nota di bibliografia | Includes bibliographical references. |
| Nota di contenuto | RSM: A Key to Optimize Machining; ACKNOWLEDGEMENTS; PREFACE; Contents; List of figures; List of Tables; CHAPTER 1: MACHINING AND CNC MACHINING; 1.1 Machining: An Introduction; 1.2 Machining Operations; 1.3 An Overview of Machining Technology; 1.4 CNC Lathe / CNC Turning Center; 1.5 Present Work; 1.6 Machining Parameters; 1.7 Summary; CHAPTER 2: CUTTING TOOLS; 2.1 Tools; 2.2 Multiple Cutting-Edge Tools; 2.3 Stages in Metal Cutting; 2.4 Tool Material; 2.5 Tool Wear; CHAPTER 3: ALUMINIUM AND ITS ALLOYS; 3.1 Aluminium; 3.2 Fundamentals of Aluminum Alloys; CHAPTER 4: RESPONSE SURFACE METHODOLOGY 4.1 RSM4.2 Outline of ANOVA; 4.3 Considered Responses; 4.4 Motivation of Study; CHAPTER 5: BACKGROUND OF MACHINING OPTIMIZATION; CHAPTER 6: MACHINING OF ALUMINIUM AND ITS ALLOYS; 6.1 CNC Machining; 6.2 Methodology Proposed; CHAPTER 7: MACHINING OPTIMIZATION: A CASE STUDY; 7.1 Machining Parameters along with their Levels; 7.2. RSM Matrix; 7.3. Execution of Designed Experiments; 7.4. RSM Statistics for MRR; 7.5 Graphical Inferences for MRR; 7.6 RSM Statistics for Ra; 7.7 Inferences for Ra; 7.8 RSM Solution; 7.9. Validation of Solution through ANOVA; 7.10 Relation In Between Responses CHAPTER 8: CONCLUSIONS & SCOPE8.1 Conclusion; 8.2 Scope for |

Sommario/riassunto

Parametric optimization, especially in machining of non-ferrous alloys seems to be quite rare and needs an immediate attention because of its associated downstream financial and non-financial losses. This book tries to fill the gap and presents an optimization problem of commonly used Al-7020 Alloy. Principles of Response Surface Methodology (RSM) have been implemented through Minitab software to bring necessary multi-response optimization, while turning on a CNC turner. The present study focuses on to enhance Material Removal Rate (MRR) while simultaneously reducing the Surface Roughness (Ra)
